Attorney Docket No.: Q90872

AMENDMENT UNDER 37 C.F.R. § 1.111 Application No.: 10/554,707

## **AMENDMENTS TO THE CLAIMS**

This listing of claims will replace all prior versions and listings of claims in the application:

## LISTING OF CLAIMS:

1. (currently amended): An aromatic-polyether-type ion-conductive ultrahigh molecular weight polymer having an ion exchange capacity of 0.1 meq/g or higher and a structure comprising an aromatic-polyether-type ultrahigh molecular weight polymer in which an acid group is introduced, said aromatic-polyether-type ultrahigh molecular weight polymer having-consisting essentially of at least one structural unit selected from those represented by the following formulas (1) and (2) and the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger:

$$\frac{\left[ \left( Ar^{1}O\right) \right] }{\left[ \left( Ar^{1}O\right) \right] }Ar^{1}$$

$$\frac{\left[\left(Ar^{2}-O\right)_{n}Ar^{2}\right]}{\left(2\right)}$$

wherein  $Ar^1$  and  $Ar^2$  independently represent an aromatic divalent group, m and n represent repeating numbers, m and n independently represent a numeral of 10 or more, and a plurality of  $Ar^1$ , a plurality of  $Ar^2$ , a plurality of m and a plurality of n may be different respectively; and wherein the aromatic-polyether-type ultrahigh molecular weight polymer has a number-average molecular weight in terms of polystyrene of 100,000 or more.

Attorney Docket No.: Q90872

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/554,707

(previously presented): The aromatic-polyether-type ion-conductive ultrahigh 2. molecular weight polymer according to claim 1, wherein the acid group is sulfonic acid group.

- (currently amended): A process for producing the aromatic-polyether-type ion-3. conductive ultrahigh molecular weight polymer of claim 1 which comprises introducing an acid group into an aromatic-polyether-type ultrahigh molecular weight polymer having-consisting essentially of at least one structural unit selected from those represented by the formulas (1) and (2) described in claim 1, the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger.
- (original): A process according to claim 3, wherein the acid group is sulfonic acid 4. group.
- (currently amended): An aromatic-polyether-type ultrahigh molecular weight 5. polymer having-consisting essentially of at least one structural unit selected from those represented by the following formulas (1) and (2), the sum of the number a of the structural unit of the formula (1) and the number b of the structural unit of the formula (2) being 2 or larger:

$$\frac{\left[\left(Ar^{1} - O -\right)_{m} Ar^{1}\right]}{\left(Ar^{2} - O -\right)_{n} Ar^{2}}$$
(1)

$$\frac{\left(Ar^{2}O\right)_{n}Ar^{2}}{\left(Ar^{2}O\right)_{n}Ar^{2}}$$

Attorney Docket No.: Q90872

AMENDMENT UNDER 37 C.F.R. § 1.111

Application No.: 10/554,707

wherein Ar1 and Ar2 independently represent an aromatic divalent group, m and n represent repeating numbers, m and n independently represent a numeral of 10 or more, and a plurality of Ar<sup>1</sup>, a plurality of Ar<sup>2</sup>, a plurality of m and a plurality of n may be different respectively; and

wherein the aromatic-polyether-type ultrahigh molecular weight polymer has a numberaverage molecular weight in terms of polystyrene of 100,000 or more.

(previously presented): A process for producing an aromatic-polyether-type 6. ultrahigh molecular weight polymer of claim 5 which comprises polymerizing by a condensation reaction at least one polymer selected from the polymers represented by the following formulas (3) and (4) in the presence of a zerovalent transition metal complex:

$$X - \left(Ar^{1} - O\right)_{m} Ar^{1} X$$

$$X - \left(Ar^{2} - O\right)_{n} Ar^{2} X$$

$$(3)$$

$$(4)$$

$$X - \left(Ar^{2} - O - \right)_{n} - Ar^{2} - X \tag{4}$$

wherein Ar<sup>1</sup>, Ar<sup>2</sup>, m and n are the same as defined in claim 5, X represents a group which is eliminated at the condensation reaction, and a plurality of X may be different.

(original): A process for producing an aromatic-polyether-type ultrahigh 7. molecular weight polymer according to claim 6, wherein X is chlorine, bromine, iodine, p-toluenesulfonyloxy group, methanesulfonyloxy group or trifluoromethanesulfonyloxy group. AMENDMENT UNDER 37 C.F.R. § 1.111 Attorney Docket No.: Q90872

Application No.: 10/554,707

8. (previously presented): A polymer electrolyte comprising the aromatic-polyether-type ion-conductive ultrahigh molecular weight polymer of claim 1.

- 9. (original): A polymer electrolyte membrane comprising the polymer electrolyte of claim 8.
  - 10. (original): A catalyst composition comprising the polymer electrolyte of claim 8.
- 11. (previously presented): A fuel cell comprising a polymer electrolyte membrane comprising the polymer electrolyte of claim 8 and/or a catalyst composition comprising the polymer electrolyte of claim 8.